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ABSTRACT

This study presents an analysis of a previous evaluation conducted by the Malawi (East Africa) government of the usefulness of long-term, off-shore (mostly in the United States) graduate education and results of a recent survey comparing career attitudes of participants and non-participants in a pre-departure orientation program. Following a discussion of evaluation theory, a critique of the evaluation commissioned by the Malawi government includes background information on the evaluation, an analysis of the data gathering techniques and instrument, and a discussion of the possible uses of the information. Application of previously developed evaluation principles to the survey (N=60) of a pre-departure orientation program found that there was no difference in the perceived relevance of graduate education to career and national development for those individuals who participated in a pre-departure orientation as compared to those who did not. However, the demographic analysis of the two groups found that the bulk of individuals who did not participate in the orientation program were doctoral students who had previously completed master's level work in the United States. Included are three tables and 10 references. (JB)

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Evaluation of Pre-departure Orientation for Long-Term, Off-Shore Graduate Education Participants

Theory & Practice

by
Steven D. Aagard

HE 025 204

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Table of Contents

Introduction 1

Theory 5

Critique 15

Implementation 20

Findings 24

Conclusions and Discussion 26

Limitations and Recommendations for Further Study 28

References 30

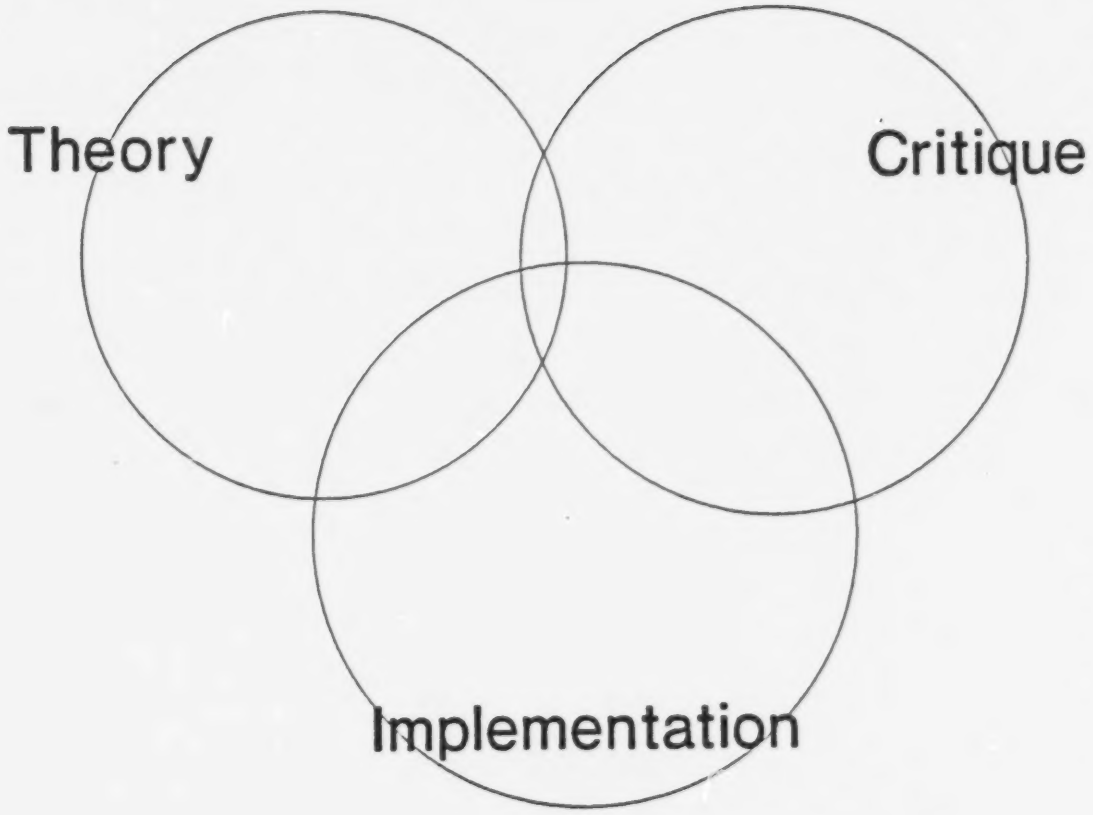
Introduction

The process of development and improvement requires constant evaluation and change. This is true of a person or an educational program. The evaluation element is critical to determine which parts of the program are worthy of continuation; which need to be modified to better fit the circumstances; and which need to be discarded/replaced. The result is a spiraling effect of application of a treatment and evaluation of its effectiveness which brings the person or the agency closer to the ultimate goal.

In focusing specifically on the evaluation portion of this process, one needs to develop an evaluation strategy that is situationally appropriate. A theoretical framework must be interwoven into the structure of the evaluation (Figure 1). The evaluator must analyze the evaluation work that has been completed previously to determine what is still needed. Finally, the application of the background and chosen design to the situation. This writer has chosen to evaluate the relevance of long term U.S. graduate education for students from Malawi, East Africa.

During the past decade, the developing countries of the world have invested more than two billion dollars in training of nationals. Training is aimed at upgrading skills and building organizational capacity through in-country and long-term, off-shore training. Richard Clough, Regional World Bank Agricultural Training Specialist for the African Desk, estimates that World Bank, USAID, and other donors have invested more than $50 million in manpower development since 1980. Major donors have invested in Malawi, most of which was in the area of long-term, off-shore training at the masters and doctorate levels. Some 75 officers from the Ministry of Agriculture have been sponsored for graduate education by USAID since 1980.

Figure 1.



Officials from Malawi and USAID are vitally interested in the impact of this training. A central question pertains to the relevancy of the training to both the individual and the agricultural development of Malawi. The USAID position is well articulated by the Mission Director Carol Pensley in 1989 when she said, "It is essential to determine both quantitatively and qualitatively the impact of the Mission's long term commitment to masters and doctorate training of Ministry of Agriculture officers in the U.S. One of the first steps is to view the training in terms of relevancy and impact of the agricultural development of Malawi."

An evaluation process was established to determine the effectiveness of long-term graduate education with Malawi students. The writer's analysis of this evaluation will be broken down into three main areas:

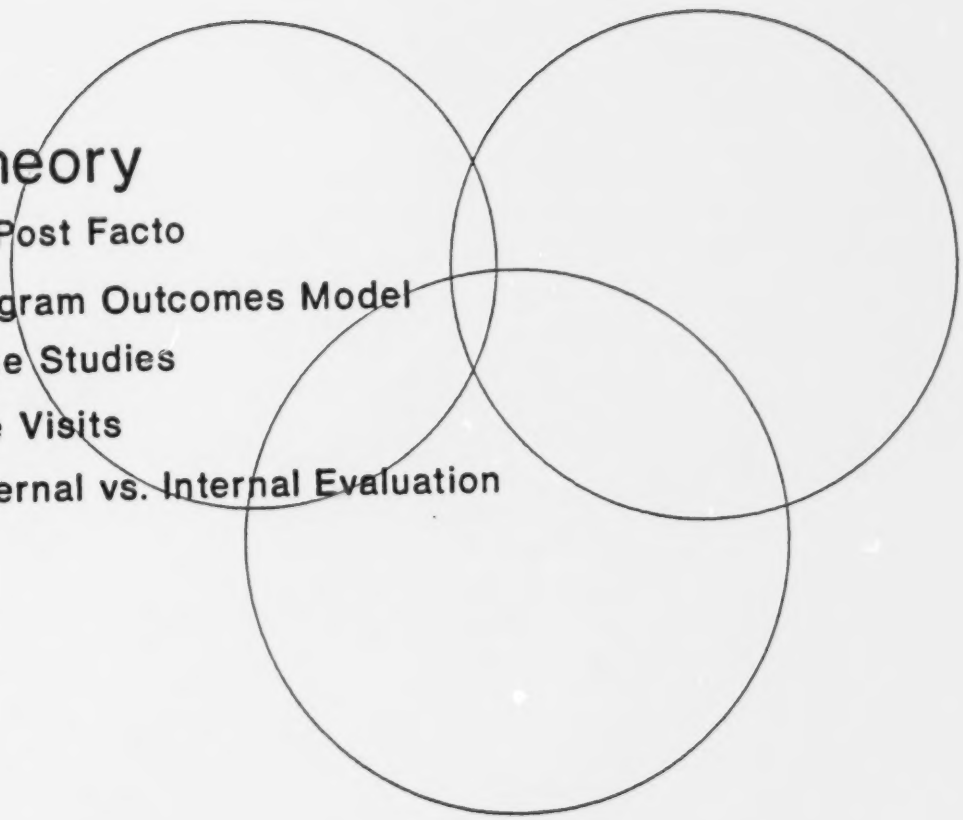
- The theoretical basis for the evaluation;
- Critique of the Malawi evaluation within that framework;
- Construction and application of evaluation techniques to a pre-departure orientation program.

The theoretical framework includes the selection of the evaluation design given the constraints of the situation and guarding against threats to the internal and external validity of the study. An evaluation model will be selected and justification for its use given. The research techniques used for data collection will also be explored. In addition to the text used in the evaluation class, the writer will incorporate insight into the evaluation process from outside sources.

After establishing the theoretical basis for the evaluation, the evaluation conducted for the Government of Malawi (GOM) by the Department of Adult and Youth Education at Washington State University will be analyzed. This will include information on the

research procedures, design and constraints. Information for this section was obtained through written reports and interviews with program evaluators. The analysis will be structured around the theoretical basis which has been developed. Included in the analysis will be a critique of the instrument used and a reaction to the information obtained.

The final section will report the application of the evaluation model and research design selected to a portion of the Malawian evaluation. A pre-departure orientation program conducted for students scheduled to begin long-term graduate study in the United States will be the focus of the evaluation. Included in this section will be the educational outcomes to be evaluated, instrument chosen to evaluate the outcomes, administration procedures, results and a discussion of the limitations and conclusions drawn from this evaluation procedure.


Theory
Ex-Post Facto
Program Outcomes Model
Case Studies
Site Visits
External vs. Internal Evaluation

Theory

The usefulness of information gained from an evaluation can depend largely on the care that is taken by the evaluator when planning the evaluation. The evaluation design and evaluation model must be carefully selected while keeping in mind the specifics of the program. There are three broad categories of evaluation designs: non-experimental, quasi-experimental, and true experimental. Within each of these broad categories, there are several types of evaluation designs. The elements used to distinguish one type from another include random vs. non-random selection, centralized or decentralized selection for the treatment, administration of a pre-test, presence of a control or comparison group and the timing of the assessment/treatment process. Selection is the "locus of decision regarding which treatment a given subject will receive." (Mohr, 1988 p.45) This selection process can determine which of the evaluation designs is the most appropriate for the evaluation. Random selection designates that the participants are being assigned to treatment and to comparison or control groups at random. Each individual has an equal chance of being in either group, whereas in non-random selection this is not the case. Centralized selection states that assignment to the groups is being made by one individual or group of individuals. The same criteria for assignment is being used on each individual. Testing the participants prior to the treatment to establish a baseline for interpretation of any differences produced by the treatment is another facet of determining which evaluation design to be used. Non-experimental designs do not utilize pre-testing procedures.

In selecting a specific design, the evaluator is concerned with two main things: external and internal validity. Internal validity is the capability of an evaluative research study to establish that the observed program outcomes were actually produced by the

program operations rather than extraneous influences. External validity is the degree to which the research findings may be generalized to a larger population (Miller, 1979). Given the circumstances of the program to be evaluated, the researcher must select the design that guards against as many threats to validity as possible. Threats to validity are alternative elements that could have brought about the change in the program participants. These threats include history, maturation, test-wiseness, attrition, selection, contamination and spuriousness. The evaluation designs can be placed on a continuum according to how well they counter those threats. This continuum would proceed from non-experimental to experimental with experimental being the most effective at guarding against the threats.

non-experimental → quasi-experimental → experimental

Experimental designs however do not often occur in real life and therefore they are the most difficult to relate to real life situations. They are often more easily constructed, but the circumstances surrounding the experiment can be rather contrived and therefore less applicable to the world outside the experiment. Since educational programs are not often constructed to meet all the criteria of experimental designs, evaluators must choose alternate methods that fit the situation. In choosing those alternate methods, the evaluator must be aware of the threats to validity inherent with that design and the limitations posed on the interpretation and use of the results.

One of the designs categorized in the non-experimental group is the ex-post-facto or "after the fact" design. This design is quite low on the continuum and therefore there are several threats to validity that the evaluator must factor in. There are two elements that characterize the ex-post-facto design:

- reconstruction of events

- decentralized selection of sample.

Ex-post-facto studies are categorized at a lower level on the research design continuum partly because of these two factors. There is a time lapse between the administration of the treatment and the assessment. Therefore, the participants must reconstruct the events that took place in order to evaluate the effectiveness of the treatment.

Perhaps more important than reconstruction is the decentralized selection into the treatments. This is the main factor that characterizes ex-post-facto designs. Subjects are not assigned to the treatment by one person or group. According to Mohr,

> "An ex-post-facto design is one in which no central authority decides which subjects are to receive the treatment and which are not, nor what intensity of treatment each is to receive. Rather, that decision is made by different persons for different subjects." (Mohr, 1988 p.166)

Decentralized selection was a large part of the Malawi evaluation. The participants were selected and sponsored by different agencies. They were placed by those sponsors in different universities and participated in different graduate programs for varying lengths of time. Hence this evaluation design has been selected by this writer for evaluating the effectiveness of the long-term, off-shore graduate education.

This decentralized selection is also responsible for the largest threat to validity of this type of evaluation design, spuriousness. An evaluator attempts to establish whether the treatment is producing the outcome of interest. In order to make that determination, the evaluator tries to reduce or account for the effect of extraneous factors on the outcome. Spuriousness is when a variation in some factor (Z) causes both the treatment (T) and the outcome (Y) to vary in such a way as to be observationally related to each other, but not due to one causing the other (Mohr, 1988). The ex-post-facto design implies a certain pre-test value that is unmeasured and this can be a major source of spuriousness. In the case

of the Malawi study, there was no pre-test value to determine a baseline for the evaluation and the sources of spuriousness are unlimited.

Another threat to validity in the ex-post-facto design is that of time-order sequencing. In the reconstruction, it is difficult to establish the exact order of key events. This order needs to be established to determine if the treatment is producing the observed outcome. The time-ordering in the case of Malawi was reconstructed by the evaluators in conjunction with GOM officials. The evaluators felt secure with the sequence established, however, this potential threat must be acknowledged.

After selecting an evaluation design that fits the program environment and purpose, the evaluator must determine the evaluation model to be used. In a book titled: *A Source Book for Program Evaluation and Accountability*, Phyllis Worden outlines several different evaluation models and their uses. Robert W. Miller also suggests an evaluation model used for rural development evaluation (Miller, 1979). Miller's Program Outcome model will be the model applied to the evaluation of the orientation program, therefore it will be the focus of this section. Given the constraints of the ex-post-facto design and the situation of the Malawi evaluation, Miller's model is well suited for this evaluation.

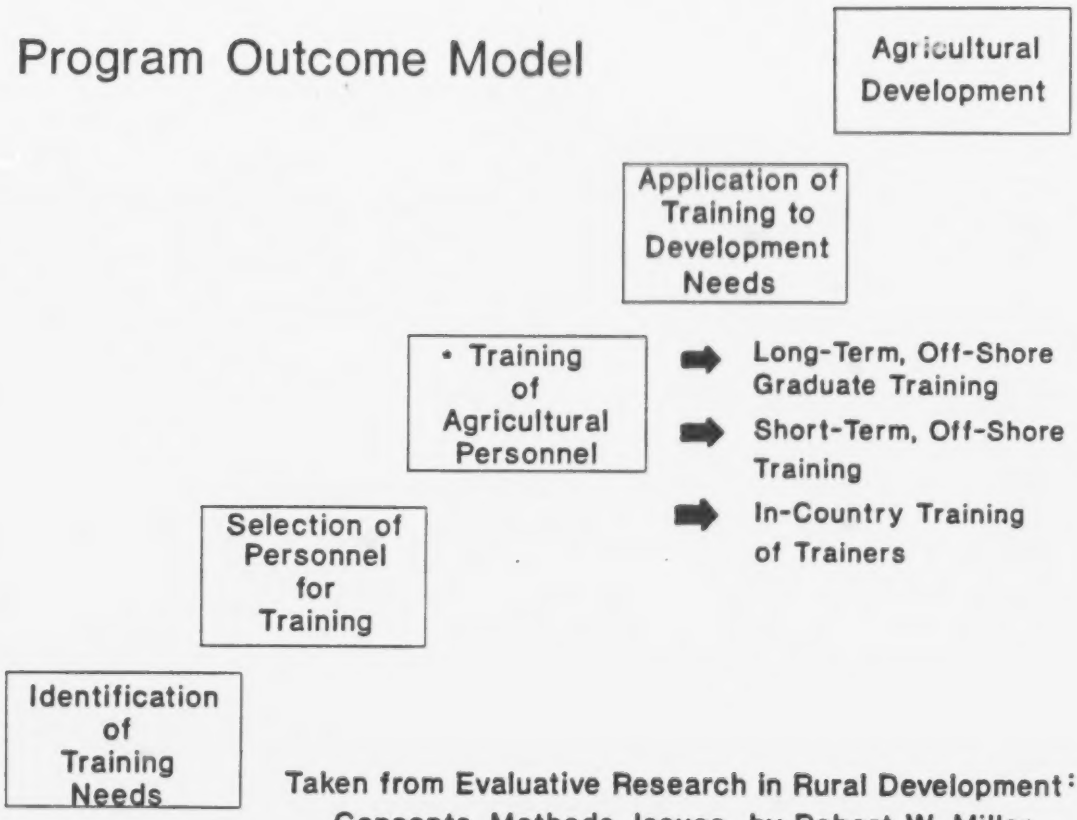
The Program Outcome Model suggests breaking the educational program into a succession of program procedures and outcomes which will need to occur if the program is to reach its ultimate goal. This model of outlining the anticipated flow of operations and outcomes is a useful guide in developing the major elements of the evaluation strategy. Each program is divided into short, intermediate, and long-term outcomes. These outcomes are presented in a chain in which short-run outcomes lead to intermediate outcomes which contribute finally to the long-run goal. These outcomes may be program procedures as well

as outcomes, hence this model can be used at various stages in the planning, implementation and evaluation of a program to determine the present status of the program. In addition, an outcome line, as suggested in Mohr's book, can be developed for each of the outcomes in the Program Outcome Model. This approach is beneficial when there is a large problem to be evaluated because it breaks the large evaluation task into smaller evaluation projects over which the evaluator has more control of intervening variables, those variables which could account for the outcome that are not part of the treatment.

In the specific case of the Malawi evaluation, the ultimate outcome of agricultural development is separated into predecessor outcomes. Each of these outcomes has an evaluation element as part of its design in order to determine if the outcome has been achieved and its effectiveness (Figure 2). This evaluation will concentrate on the training outcome. The Malawi evaluation conducted by AYE in the summer of 1990 incorporated an assessment of each of the training elements: long-term, off-shore graduate education, short-term, off-shore training, and training of trainers. A Mohr Outcome Line has been developed for the long-term, off-shore graduate training outcome (Figure 3). Outcome lines visually display the outcome of interest broken down into its component sub-objectives and the activities that contribute to each of those sub-objectives. By breaking down each of the outcomes in Miller's Program Outcome Model further using the Outcome Line design suggested by Mohr, the evaluator can define each step of the educational program and specific tasks that may be more readily evaluated. This process also helps the evaluator to establish the relationships between the sub-objectives and the ultimate goal. The outcome line for the Malawi study will be addressed in detail in the Critique section of this paper.

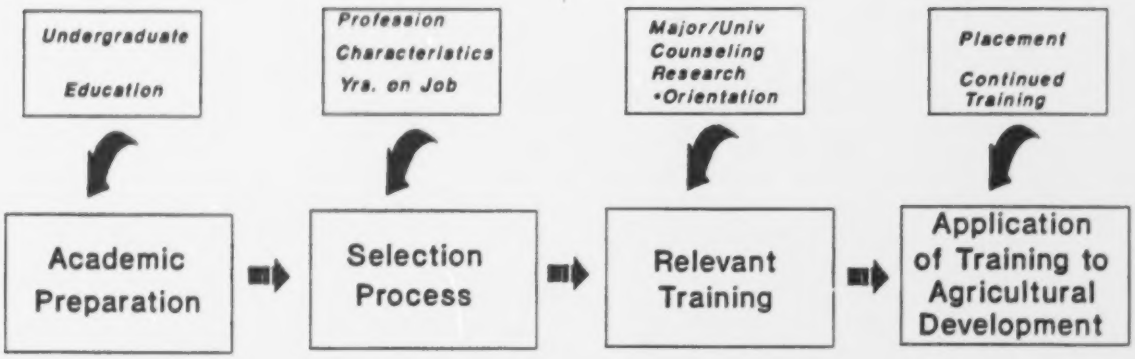
Figure 2.

Program Outcome Model


Agricultural Development
Application of Training to Development Needs
• Training of Agricultural Personnel
Long-Term, Off-Shore Graduate Training
Short-Term, Off-Shore Training
In-Country Training of Trainers
Selection of Personnel for Training
Identification of Training Needs

Taken from Evaluative Research in Rural Development: Concepts, Methods, Issues by Robert W. Miller

Figure 3.



Outcome Line
Long-Term, Graduate Education

Taken from: Impact Analysis
for Program Evaluation
by Lawrence B. Mohr

The program outcome model was constructed to address the issues concerning rural development. It is designed for programs that take a long time to reach their ultimate goal. This model would be quite cumbersome for a short term program and would probably not be necessary. Miller indicates that by separating the evaluation task into outcomes and evaluating those outcomes it is easier to identify which parts of the program achieved their desired aim and which did not. He cautions that the lack of evidence that the program achieved its objective may be due to the sensitivity of the instrument used to assess the outcome. Sensitivity of the instrument is an issue that will be discussed further in the Critique and Implementation sections.

In building the theoretical basis for the analysis of the Malawi evaluation there are two other non-experimental research designs that should be explained. These designs are:

- Case Studies
- Site Visits

Case studies use a wide range of available information about a program to build a narrative description of program processes and outcomes (Miller, 1979). This information is gathered using techniques which include: informal conversations with program participants, analysis of program reports, systematic surveys of program participants and staff members. The case study produces a hodge podge of different information which may constitute a pattern of meaningful and convincing findings (Miller, 1979). One of the main problems of this type of evaluation is that this design lacks the type of in-depth information that is produced by experimental and quasi-experimental research. At best, it produces a shot-gun approach to evaluation. There is also the threat of bias by the evaluator in the selection of which information should be included and the interpretation of that information. However this

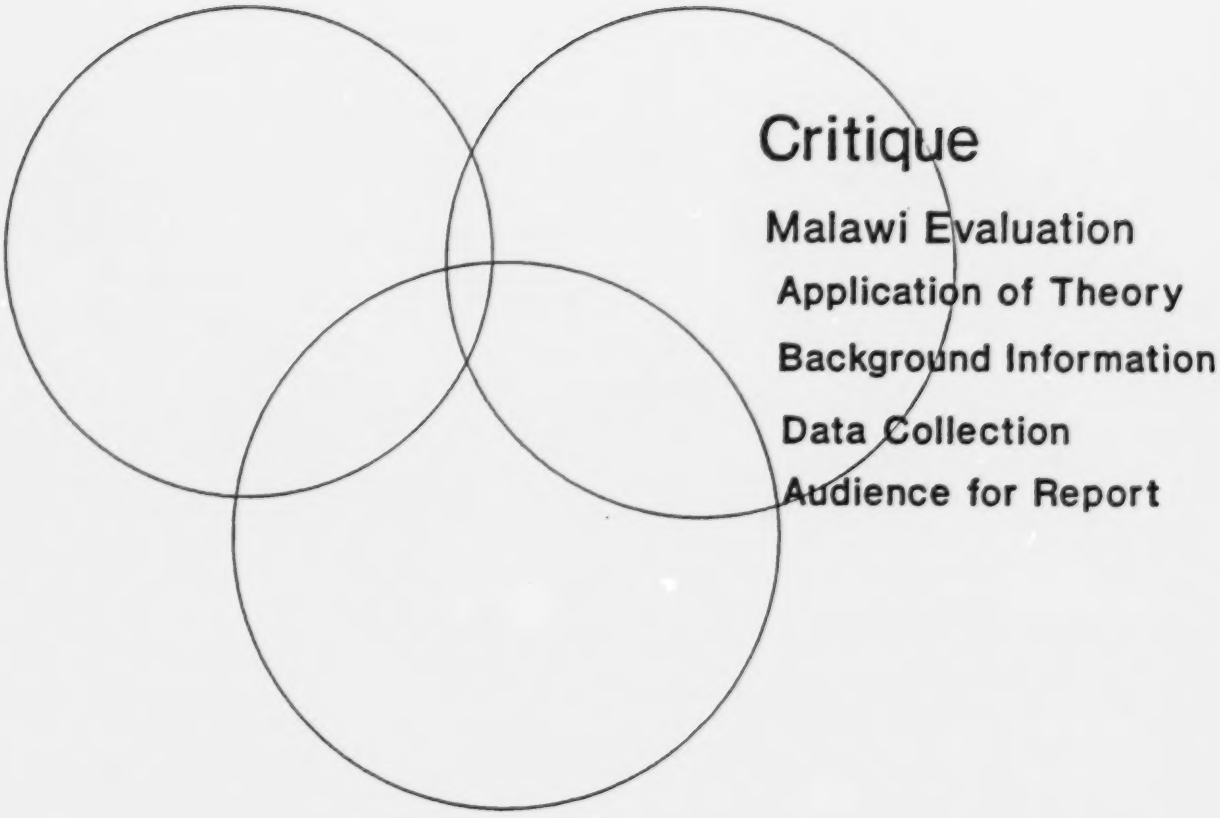
type of research often best resembles real life situations. Caution should be taken when ascribing the outcome as a direct result of the treatment. Many aspects of the Malawi evaluation resemble some of the factors included in the case study research design and it was therefore important to introduce this non-experimental design. The same is true for the site visit method.

Site visit evaluation refers to a limited assessment of a program made by an evaluator during the course of a rather brief visit to a program site. Aspects of the program operation are selected for study. This study includes interviews with selected staff members and program participants, as well as document analysis. The evaluator's own standards can play an important role in the judgements that are made (Miller, 1979). When using this type of evaluation, these shortcomings must be acknowledged. This method, though flawed, can often be better than no evaluation at all.

A final theoretical area that should be addressed in order to fully understand the procedures used in the Malawi evaluation is that of inside vs. outside evaluation. In the case of the Malawi project, the Government of Malawi commissioned a group of outside evaluators to conduct the evaluation of their training procedures. According to Miller, several factors enter into a decision to use outside evaluators. The threat felt by members of the organization will be increased when using outside evaluators. Time will be needed for the outside evaluator to get acquainted with the program. Complexities and nuances may be overlooked by an outside evaluator (Miller, 1979). Conversely, the outside evaluator can give a more objective assessment of the program. The objectivity of the evaluation is affected by the stake that the individual has in the success of the project or outcome. An inside evaluator can be biased by his/her interest in seeing the program succeed or fail. On

the other hand, outside evaluators judge the program based on measured outcomes and may not fully appreciate the context of the program.

It is important to establish the theoretical framework within which the evaluation will be conducted in order to understand the limitations of the evaluation itself and the application of the results. Since evaluation is the estimation of the "value" of a program or outcome, it is vital to select the design that fits the needs of the program and maximizes the use of the evaluation findings.


Critique
Malawi Evaluation
Application of Theory
Background Information
Data Collection
Audience for Report

Critique

With this theoretical background, the next step will be to apply this information to a critique of the evaluation conducted for the GOM in the summer of 1990. This critique includes information that was obtained through interviews with the evaluators, analysis of the instruments used, and reports submitted to the Government of Malawi and USDA. It will include background information on the evaluation, an analysis of the data gathering techniques and instruments used to assess program effectiveness, and the possible uses of the information.

In December 1989 approval was given from the Malawian Ministry of Agriculture to conduct an evaluation of the training component of the National Rural Development Programme V (NRDP V). This evaluation was a midway assessment of the effectiveness of the training element of the Government of Malawi's Ten Year Development Plan. The Ministry of Agriculture, with financial support from World Bank, commissioned the USDA for the evaluation. USDA awarded the evaluation contract to the Department of Adult and Youth Education at Washington State University. Two evaluators, Dr. Ron Jimmerson and Dr. Jim Long, from the department conducted the evaluation. They were assisted by Dr. R. Mkandawire and several students from Bunda College. Also a small committee from the Ministry of Agriculture was to have been formed to work with the evaluators. Dr. Tom Trail was serving as a Training Advisor in the USAID Mission in Malawi and contributed to this evaluation.

Dr. Ron Jimmerson traveled to Malawi in April of 1990 to begin the evaluation process. The evaluation of training included three main types of training:

- Long-term, Off-shore Graduate Education

- Short-term, Off-shore Training
- Training of Trainers.

The objectives of the evaluation were outlined before the evaluator traveled to Malawi. The first two weeks were spent interviewing various stakeholders in the training and evaluation process. These interviews were to collect data related to the identification of expectations for the evaluation and to identify issues and concerns related to training (Jimmerson, 1990). Based on those interviews and document analysis, questionnaires were developed to collect data from those who had participated in the training. Two types of questionnaires were administered to the three groups of individuals. One questionnaire was administered to those who participated in short-term, off-shore training and the in-country Training of Trainers. These two groups were compared to each other (Appendix A). Participants in long-term, off-shore graduate education were surveyed using a questionnaire developed by David Acker and used in a study of long-term training graduates in Tanzania (Appendix B). An additional section was added to the Acker survey to assess specific skill gains in the areas of task-oriented and process-oriented skills. This section was developed by Dr. Jimmerson. Dr. Trail was instrumental in locating the Acker survey and assisting with data collection.

The data compilation and analysis were conducted under the direction of Dr. Mkandawire and other faculty members at Bunda College. In July of 1990, Dr. Jim Long traveled to Malawi to interpret the data and to write the initial report for the Government of Malawi. Upon return to the U.S., the final report of the data was written and distributed in November, 1990.

The evaluators utilized several methods for data collection. As stated earlier, Dr.

Jimmerson interviewed stakeholders. He noted that the interviews were generally unstructured and informal. Through this process, he was able to make the individual more at ease and get valuable information about the training process and elements that should be involved in the evaluation. As an outside evaluator, he had some preconceptions about the state of the training in Malawi, but he found those to be false. In fact, he was quite surprised with the complexity of their training procedures. He indicated that there were very few problems with language when he was interviewing the government officials and faculty members. He did utilize an interpreter when he proceeded into the field to talk with the local agriculturists. Jimmerson also spent time analyzing government reports on training to gain some perspective on the history of the training program. In the theory section of this report, the elements of case study and site visits were explained. This study incorporated elements of those non-experimental designs. It was also conducted by an outside evaluator. That could have affected the findings of the evaluation.

For the purposes of this critique, the long-term, off-shore graduate education element of this evaluation will be evaluated to the exclusion of the others. This element is one that U.S. universities, faculty, and administrators have the most control over and subsequently can make the most difference. The evaluation design utilized in the Malawi evaluation is definitely ex-post-facto. There was not pre-test to establish baseline data. The evaluators and the participants are charged with reconstructing the program events of the previous five years. The selection of the individuals to treatments was decentralized; the report on by Long, et al 1990 indicated that the participants were selected and sponsored by different agencies for graduate study in the U.S. The level of the treatment may have been different for each participant given the fact that many participants attended different universities,

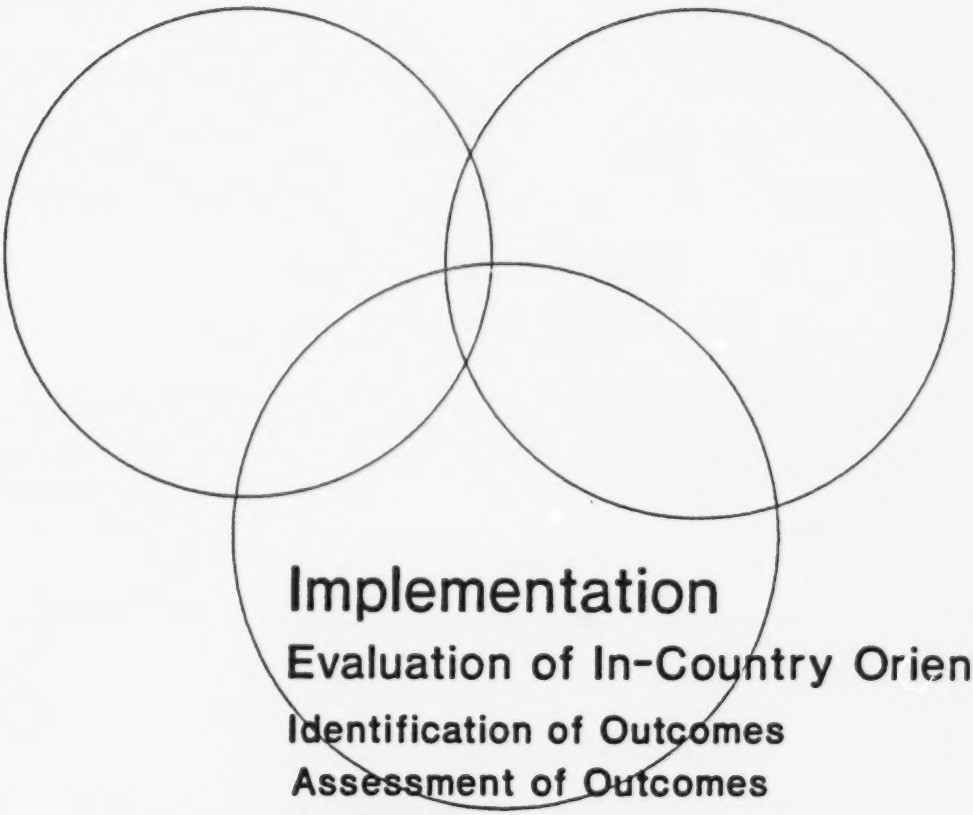
pursued different degree programs, and encountered different cultural circumstances.

An instrument was developed by David Acker to assess the perceived relevance of graduate education to the participant's career and their country's agricultural development needs. This instrument included 28 questions that dealt with the relevance of education to career development. Each question solicited information in two sections: one that addressed the emphasis in training and the relevance to career. The items were rated on a Likert scale (1 = very relevant, 5 = not relevant). There were also 9 questions pertaining to national agricultural development arranged in the same fashion. The third section gathered demographic information. In addition, another section assessed the increases in skills as a result of graduate education. There was no information available on the validity or reliability of the instrument. The questionnaire collected qualitative data on the participants' perceptions of relevance, not quantitative data on actual application of the graduate education to their careers and national agricultural development.

Phyllis Worden outlined some advantages and disadvantages of using questionnaires. Some of the advantages to using questionnaires are that they are easily coded and they are easily adapted to sampling techniques, useful with large numbers of people in differing geographical regions, they can be administered anonymously , and they require less time than interviews. The disadvantages are that questions cannot be clarified in a mail-in questionnaire, response rate can be low, generalizations cannot be made unless a high rate of return is obtained, respondents may leave questions blank resulting in incomplete data, and the responses may represent only the extreme opinions (Worden, 1987). It was necessary to utilize questionnaires given the amount of time that the evaluators were in the country. The completion of questionnaires allowed for the data to be compiled and

analyzed in-country without the direct supervision of the evaluators. The directions for completing the questionnaire and the purpose of the study could be explained in a cover letter. There was a high response rate with 61 out of 73 (83.6%) surveys returned. However, some of the questionnaires were missing a page and others were not filled out completely which decreases the number of responses on some items.

The results of this evaluation were compiled and distributed to the Government of Malawi and the USDA. It included the findings from each type of questionnaire, including the means on each of the Likert items and recommendations for the next 5 years. The objectives of the training as established by the Government of Malawi placed a lot of emphasis on the number of training sessions, number of people involved in the training, and number of employees who had completed advanced degrees in the U.S. The evaluators attempted to construct the evaluation to include not only the quantity of people involved in the programs, but also the quality of those programs and their application to agricultural development. The surveys relied on the participants' ability to reconstruct their graduate education and determine its relevance to their present situation. This reconstruction is one of the focuses of ex-post-facto evaluation designs, but also threatens the validity of the findings. However, this ex-post-facto evaluation design provides valuable information as to the influence of graduate education (the treatment) on the participants' to secure the positions that they presently hold (the career outcome). Further analysis of the questionnaires given to the long-term, off-shore graduate education participants will be presented in a monograph compiled by the Department of Adult and Youth Education at Washington State University. This monograph will focus on a comparison of the data from David Acker's original work in Tanzania and these data from Malawi.



Implementation

Evaluation of In-Country Orientation

Identification of Outcomes

Assessment of Outcomes

Limitations

Threats to Validity

Implementation

After developing the theoretical framework and analyzing the background of an evaluation that was previously completed, the final step was to apply those principles to the evaluation of the pre-departure orientation program. This evaluation was structured using the Thirteen Major Steps in Program Evaluation as a reference (Long, 1987). The writer utilized the ex-post-facto evaluation design and the program outcome model to construct an evaluation of this program. The short, intermediate and long-run outcomes were identified and the activities and assessments involved with each of those were examined. The methods of data collection, characteristics of the sample, and data analysis techniques were explained. The results and limitations of the evaluation were discussed. Finally, the conclusions and recommendations for further study into this area were examined.

Introduction:

The rigors of graduate education are well known to graduate students from all nations. When you add to those difficulties the adaptation to foreign country and culture, the problem is compounded. To decrease the amount of dissonance that the Malawian student feels while studying in the U.S., an orientation program was planned for all students leaving for study in the U.S. The program was organized by the USAID Training Office and the Ministry of Agriculture Training Office. The educational objectives of the orientation were:

- Develop an understanding of USAID, USDA, GOM and University regulations, policies and procedures.
- Increase understanding of how to develop strategies and techniques to adjust to American culture.

- Increase understanding of how to adjust to the U.S. universities.
  - the academic advisor
  - program of study
  - study habits
  - thesis/research
  - student organizations
  - international student office

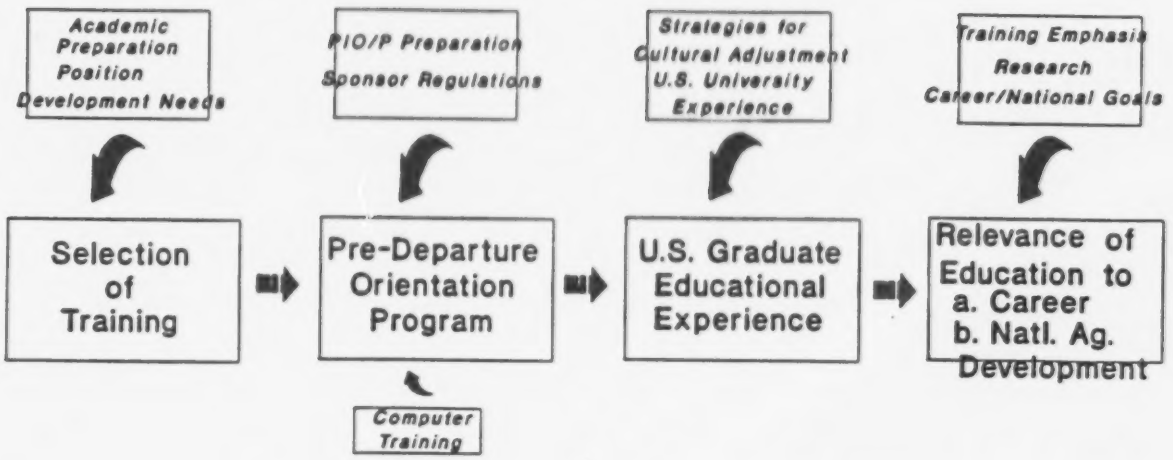
The orientation was a two day session that was conducted within the month prior to leaving. The computer training was conducted separately and PIO/Ps were completed during a two-day work session. The orientation organizer ranked the program a 4.5 on a scale of 1-5, where 1=none of the needs met and 5=all needs met (personal interview with Dr. Tom Trail, Training Advisor).

The purpose of this evaluation is to determine the relationship between the orientation program and the perceived relevance of the graduate education for those who participated in it as compared with those who did not. Also, to determine if there was any difference in the demographic make-up of the two samples.

Methodology

The sample is made up of individuals who participated in long-term graduate education in the U.S. (n=60). Forty-six individuals participated in the orientation program, 14 did not. The evaluation design used is the ex-post-facto (Mohr, 1988) and the evaluation model used is the program outcome model (Miller, 1979). The program outcomes have been identified and an outcome line for the orientation program has been developed (Figure 4). The instrument that is being used to estimated the relevance of graduate education was developed by David Acker (Appendix B) and was utilized in the 1990 evaluation of NRDP V for the Government of Malawi conducted by the Department of Adult and Youth Education, Washington State University.

Figure 4.



Outcome Line
Pre-Departure Orientation Program

Adapted from: Impact Analysis for Program Evaluation by Lawrence B. Mohr

The dependent variable is the relevance of graduate education to career and to national agricultural development. The independent variable is participation in the pre-departure orientation. Intervening variables could include demographic characteristics: age, and gender; graduate educational characteristics: major, university, level of degree; and professional characteristics: position, years to retirement, type of employer.

Means were calculated for the 28 items which pertain to the perceived relevance of graduate education to career development for each sub-sample. T-tests were used to determine if any significant difference that existed between the mean relevance values for the two groups. The procedure was repeated for the 9 items which pertain to perceived relevance of graduate education to national agricultural development. A probability level of .05 was used to determine if the means of samples are significantly different. Frequencies of response for other demographic variables was calculated, as well as the frequency of response for questions 19a and 19b which asked the participants to rate the adequacy of academic counseling prior to departure (19a) and while studying in the U.S. (19b) (rated on the following scale 1= adequate, 2= inadequate, 3= did not receive).

Threats to Validity

This evaluation used the ex-post-facto design which encompassed the reconstruction of events and decentralized selection. The threats to validity included time-order sequencing and spuriousness. It was necessary to use this design because the selection of participants for graduate education was decentralized. Several different agencies within the Ministry of Agriculture nominated individuals for participation in graduate study and the donor agencies selected them. Within the sample, the participants in the orientation program were volunteers, which contributed to the decentralized nature of the selection process. Also,

individuals were asked to reconstruct events to determine their perceptions of the relevance of their graduate education to their career and to national agricultural development. Spuriousness was a threat to this study. Due to the lack of pre-test information, it was virtually impossible to determine if any changes in relevance were due to the orientation program or to other events that could have occurred prior to their leaving their home country, while studying in the U.S., or after their return. The subjects received different types of treatment for different lengths of time which poses a threat to the external validity of the study. The section of Acker's survey that solicited responses regarding the emphasis in training with respect to several different areas could provide insight into the differences in the treatment experienced by the participants.

Findings

Means were calculated for the questions that pertained to relevance of graduate education to career for each group. The results are represented in Table 1. There was no significant difference between the means of these two sub-groups for this item. For the items which pertained to the relevance of national agricultural development, means were also calculated and the values are represented in Table 1. There was no significant difference between the two sub-groups with respect to national agricultural development. Frequencies were calculated on the responses to questions 19a and 19b dealing with the adequacy of academic counseling prior to departure and while studying in the U.S. The results are presented in Tables 2 and 3.

Of those who participated in the orientation, 83% were male (n=38) and 17% were female (n=8). Seventy-four percent of the participants were going to pursue M Sc. degrees and 22% were doctoral students. The average age of the non-participants was 40.

Table 1.

Means for Relevance to Career and National Agricultural Development (scale: 1=very relevant, 5=not relevant)

	Relevance	
	Career	Agricultural Development
Participated in Orientation	2.00 (n=46)	2.63 (n=46)
Did not Participate	2.08 (n=14)	2.58 (n=14)

* no significant difference at p<.05.

Table 2.

Adequacy of Academic Counseling Prior to Departure (Percentage of Responses)

Participated in Pre-Departure Orientation	Adequate		Inadequate		Did Not Receive		No Response	
	N	%	N	%	N	%	N	%
Yes	17	37	9	20	13	28	7	15
No	3	21	3	21	7	50	1	7

The remaining 4% indicated that they were bachelor's degree seekers. The average age for the orientation participants was 38 years old. In the group that did not participate in orientation, 71% were male (n=10) and 29% were female (n=4). Sixty-four percent of the students were doctoral students and 36% were M Sc.

Table 3.

	Adequacy of Academic Counseling While Studying in the U.S. (Percentage of Responses)							
Participated in Pre-Departure Orientation	Adequate		Inadequate		Did Not Receive		No Response	
	N	%	N	%	N	%	N	%
Yes	20	43	12	26	6	13	8	17
No	7	50	5	36	1	7	1	1

Conclusions and Discussion

From the data presented, it can be concluded that there was no difference in the perceived relevance of graduate education to career and national development for those individuals who participated in a pre-departure orientation as compared to those who did not. However, the demographic analysis of the two groups produced an interesting finding, the bulk of individuals who did not participate in the orientation program were doctoral students who had previously completed master's level work in the U.S. (9 out or 14). That previous experience at a U.S. university could have served the same purpose as the

orientation program for the other individuals. This exposure to U.S. graduate education was not controlled for in this evaluation. Conversely, most of the participants in the orientation program were embarking on master's study in the U.S. after receiving their undergraduate degree in Malawi.

There was a difference in the percentage of individuals who reported adequate pre-departure academic counseling between the orientation participants and non-participants. Thirty-seven percent of the orientation participants reported adequate pre-departure academic counseling. This compares with 21% of the non-participants. Fifty percent of the non-participants reported that they did not receive any pre-departure academic counseling as compared to 28% of the orientation participants. It is unclear why the number of individuals who participated in the orientation program who reported that they did not receive any pre-departure academic counseling is so high. Perhaps the wording of the question could have influenced the responses or the fact that the respondents were being asked to reflect back on something that happened several years ago. This type of discrepancy is to be expected with the ex-post-facto design.

Another issue that must be addressed when focusing on the ex-post-facto evaluation of the orientation program is that the questionnaire was not designed specifically to assess the outcome of the orientation program. The writer is taking a survey that was administered for a different purpose and extrapolating the responses for certain items with respect to participation in an orientation program. More conclusive evidence of the achievement of program outcomes would possibly result from an instrument designed and administered specifically for the purpose of evaluating the orientation program.

Limitations and Recommendations for Further Study

One of the biggest limitations to the generalization of the results observed in the Malawi study to a larger population is the fact that the selection was decentralized. There are so many different factors that could have affected the perceptions of relevance by the evaluation participants. The lack of a pre-test compounds the problem of establishing a baseline for this study. Using the ex-post-facto design and trying to separate the sample based on the intervening variables could help to account for their association with the outcome. However, experimental or quasi-experimental studies should be conducted in which some of the intervening variables are controlled in a more structured setting in order to cement any conclusions about their effects on the outcome.

No decisions regarding the continuation of the orientation program should be made based on this assessment. Further research should also be conducted which addresses the objectives of the orientation program specifically to determine if similar programs could be effective with other graduate students from developing countries who will begin programs in the U.S. It would also be interesting to ascertain if the orientation program has continued, and if so, has the format changed or do they still incorporate the same educational objectives. Perhaps a comparison between countries that provide an orientation and those which do not would be helpful in developing some educational objectives and a program plan that could be used in many USAID Missions in developing countries across Africa or the world.

A comparison between the perceived relevance of graduate education using the Acker instrument and the actual amount of knowledge/skills that the participants use in their job could provide some interesting results. The actual amount of knowledge gain

would have to be assessed if the orientation program has continued, if so has it changed. Perhaps a comparison between countries that provide an orientation and those which do not would be helpful in developing some educational objectives and a program plan that could be used in many USAID Missions in developing countries across Africa or the world.

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